



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/537,893

06/07/2005

Gilles Mathieu

21.1099

7206

23718 7590 07/05/2007
SCHLUMBERGER OILFIELD SERVICES
200 GILLINGHAM LANE
MD 200-9
SUGAR LAND, TX 77478

EXAMINER

LE, TOAN M

ART UNIT

PAPER NUMBER

2863

MAIL DATE

DELIVERY MODE

07/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

14A

Office Action Summary	Application No.		Applicant(s)	
	10/537,893		MATHIEU ET AL.	
	Examiner		Art Unit	
	Toan M. Le		2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 and 9-15 is/are allowed.
- 6) ☒ Claim(s) 6, 7 and 16-19 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2007 is/are: a) ☒ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings were received on 4/23/07. These drawings of Figures 1-8 are accepted.

Claim Objections

Claim 6 is objected to because of the following informalities:

Claim 6, line 7, "signal" should read -signals-.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6-7 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by "Reservoir Applications of Dipmeter Logs", Delhomme et al. (referred hereafter Delhomme et al.).

Referring to claim 6, Delhomme et al. disclose a method for matching a plurality of data sets from boreholes or core sections, the data sets being obtained from sensors are two-dimensional data sets and are indicative of a boundary, or interface of earth formations and of dip in the vicinity of the borehole, the method for depth matching comprising:

combining individual signals making up the respective two-dimensional data set for each two-dimensional data set of the plurality of data sets to create a first and a second averaged signals (page 180, 2nd col., 3rd paragraph);

Art Unit: 2863

processing the first and second averaged signals, each corresponding to one two-dimensional data set, to calculate an offset that correlates the first and second averaged signals (page 180, 2nd col., 3rd paragraph);

depth matching the two-dimensional data sets to each other by applying the calculated offset to the two-dimensional data sets (page 180, 2nd col., 3rd and 4th paragraphs); and

performing at least one of displaying, storing and transferring the depth matched data sets (Figure 2).

As to claim 7, Delhomme et al. disclose a method for matching a plurality of data sets from boreholes or core sections, the data sets being obtained from sensors are two-dimensional data sets and are indicative of a boundary, or interface of earth formations and of dip in the vicinity of the borehole, wherein the averaged signals are obtained by determining an average of the sensor signals along the bedding dip for a given depth in the borehole (page 180, 2nd col., 3rd and 4th paragraphs; Figure 2).

Referring to claim 16, Delhomme et al disclose a method for matching a plurality of data sets from boreholes or core sections, the data sets being obtained from sensors are two-dimensional data sets and are indicative of a boundary, or interface of earth formations and of dip in the vicinity of the borehole, wherein two-dimensional data sets to be depth matched are obtained at the same time by sensors that are vertically spaced from each other longitudinally along the borehole (page 180, 1st col., Introduction; 2nd col., 3rd paragraph).

As to claim 17, Delhomme et al disclose a method for matching a plurality of data sets from boreholes or core sections, the data sets being obtained from sensors are two-dimensional data sets and are indicative of a boundary, or interface of earth formations and of dip in the

Art Unit: 2863

vicinity of the borehole, wherein two-dimensional data sets to be depth matched are obtained at different times for the same borehole (page 182, 1st col., lines 6-21).

Referring to claim 18, Delhomme et al disclose a method for matching a plurality of data sets from boreholes or core sections, the data sets being obtained from sensors are two-dimensional data sets and are indicative of a boundary, or interface of earth formations and of dip in the vicinity of the borehole, wherein a two-dimensional data set to be depth matched is obtained from a core section (page 182, 1st col., Use in Reservoir Studies: 1st and last paragraphs).

As to claim 19, Delhomme et al disclose a method for matching a plurality of data sets from boreholes or core sections, the data sets being obtained from sensors are two-dimensional data sets and are indicative of a boundary, or interface of earth formations and of dip in the vicinity of the borehole, wherein each of the sensor signals is obtained from a sensor of a plurality of sensors (Figures 5-7).

Allowable Subject Matter

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reason for allowance of claim 8 is the inclusion of computing bedding dips is performed by Hough transform.

Allowable Subject Matter

Claims 1-5 and 9-15 are allowed.

The reason for allowance of claim 1 is the inclusion of transforming the two-dimensional data sets into three-dimensional images using the Hough transform; deriving two dimensional curves from the three-dimensional images by the application of the Hough transform to depth derivatives of sensor signals; and depth matching the two dimensional data sets to each other by applying the offset to the two dimensional data sets. Delhomme et al. do not teach or suggest using the Hough transformation.

The reason for allowance of claim 2-5 and 9-15 is they depend on allowable claim 1.

Response to Arguments

Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan M. Le whose telephone number is (571) 272-2276. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

Art Unit: 2863

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Toan Le

June 28, 2007



John Barlow
Supervisory Patent Examiner
Technology Center 2800